

collata, the second by *A. neapolitana*, *A. cuneata*, and *A. cistellula*; and it is deserving of notice that, from the study of the interior, Scacchi had, as far back as 1833, perceived the differences which *Argiope* presents from *Terebratula*, and had thus indicated the probable necessity for the creation of a distinct genus for its reception.

50. *Argiope cuneata*, Risso. Syn. *Anomia pera*, Mühlfeldt = *T. Soldaniana*, Risso. Hab. Mediterranean.

51. *Argiope neapolitana*, Scacchi. Syn. *A. Forbesii*, Dav.

52. *Argiope cistellula*, S. Wood. Hab. Mediterranean and British Seas. The surface of this shell is smooth; and I regret that Sowerby's figure in Mr. Reeve's monograph does not convey a faithful representation of the species.

Genus THECIDIUM, DeFrance.

53. *Thecidea mediterranea*, Risso. Syn. *Th. testudinaria*, Michelotti = *Th. spondylea*, Scacchi.

So that fifty-three so-termed species have been for the present catalogued; but of these a certain number will in all probability, when better known, have to be cast among the synonyms. In the mean time, we are greatly indebted to Prof. Suess and to Mr. L. Reeve for the additional information they have imparted.

I am, Gentlemen,

Your very obedient Servant,

Brighton, May 29, 1861.

THOS. DAVIDSON.

IV.—Contributions to an Insect Fauna of the Amazon Valley.

COLEOPTERA: LONGICORNES. By H. W. BATES, Esq.

THE number of species of Longicorn Coleoptera which I collected at different stations on the banks of the Amazons amounts to about 705. The collection appeared to me to contain so large a number of curious and interesting forms new to science, that I was anxious to make them known to the entomological public as soon as possible, first determining the already known species, and fixing upon a classification of the genera and groups. I then hoped to be able to give a complete view of the Amazonian productions in this department, incorporating a few general remarks on their natural history, instead of following the usual and much easier practice of giving merely a bare and unfruitful list of diagnoses of the new species.

It has been a difficult task, however, in the absence of a modern monograph on the family, to characterize the genera, and especially to group them into subtribes or groups subordinate to the four tribes of Latreille, which for a long time constituted the only received classification, but are now manifestly insuffi-

cient to give a lucid view of the contents of this greatly augmented family of insects. Within each of the tribes the diversity of forms is so great that it has become absolutely necessary to subdivide them, and ascertain at the same time the relations of the subdivisions to each other. I was therefore unwilling to publish descriptions of the new forms without first attempting to class the whole in natural groups, as well as to define better the already known genera. A mere succession of a multitude of genera treated in an isolated manner, without indications of the affinities which link them together (such, in fact, as has been given hitherto in works on the family), could lead to no useful scientific results.

No general treatise has appeared on this subject (until within the last few months) since the imperfect one of Audinet-Serville in 1832-4. In this work the genera are very insufficiently characterized, often from the examination of a single species. Shortly afterwards appeared the third edition of the Catalogue of Count Dejean, in which a great number of new genera were introduced without characters at all. On the uncertain foundation, however, of these two works, a vast number of new species and genera have been published, many of the former being referred, in a most loose and unsatisfactory manner, to the uncharacterized genera of Dejean. The want of a good monograph, such as exists on many other families of Coleoptera, has long been felt. Faunists, in treating of the family in their special works, and authors of the numerous works on the zoology of voyages, public and private, have been obliged to describe great numbers of new genera and species without reference to a reliable general classification; besides which, many Coleopterists to whom the family is attractive on account of the great beauty and variety of its forms, have continually published isolated descriptions of new species and genera, and this in every variety of natural-history periodical, and in almost every European language. In this way at length about 820 genera and 4500 species have been introduced into the science, a very large portion of them without proper indications of their place in the system.

The general treatise upon the Longicornes which I have alluded to above as having appeared very lately is by M. J. Thomson of Paris, and entitled 'Essai d'une Classification de la Famille des Cérambycides.' It is founded on a previous special work on the North American Longicornes published by Dr. Leconte in 1852, called 'An Attempt to classify the Longicorn Coleoptera of America north of Mexico.' The latter essay was a great step in advance, as it entirely remodelled the previous knowledge on the subject, and took into account many parts of the structure of these insects which were left unheeded by pre-

vious writers. Although a faunistic work, it comprehended here and there the results of the examination of genera found in other parts of the world. The treatise of M. Thomson consists of an application of Leconte's classification to the Longicornes in general. Both these essays, however, leave much to be desired, for reasons to be mentioned presently. The only other works which contain considerable modifications of the system of Latreille are Mulsant's '*Coléoptères de France (Longicornes)*,' 1839, and Blanchard's '*Histoire des Insectes*,' 1845. The former, although containing an excellent analysis of the species and genera found in France, added little that could be applied to the family generally. The latter proposed a number of subtribes, but with insufficient and inapplicable characters, and without any review of the genera comprehended under them.

Leconte divided each of the tribes of Latreille into a number of subordinate groups, characterized after a searching examination of the whole external structure of the insects. It is doubtful, however, whether his groups can be all maintained: the classification is open to much objection, and, I think, will require considerable emendation before being applied generally. The important discovery of a very constant character for the tribe Lamiaires, viz. the existence of an oblique groove on the inner side of the fore tibiæ, is due to Zimmerman, who first called attention to it. The existence of a smaller similar groove surmounted by a tubercle on the outer side of the middle tibiæ, in most of the divisions of the same tribe, was not mentioned. The form of the anterior acetabula, or sockets of the fore haunches, is employed too rigorously: it is a constant character in some groups of Lamiaires, being a good guide, for instance, in distinguishing the Colobothæ from the true Saperditæ, with which they had been confounded by all previous authors; but it separates *Acanthoderes* and its allies too widely from *Oreodera*, *Dryoctenes*, and similar genera, with which they are in all other characters closely connected. In fact, some of these genera are extremely variable in this character. The form of the anterior acetabula depends upon how far the suture which runs from their external rim to the line which separates the pronotum from the pectus is opened or closed. This suture seems to be that which separates the episternum from the epimera, and, according to the shape or manner of action of the fore haunches, it is either quite closed, more or less gaping near the rim of the socket, partly closed but not gaping at its commencement, or widely opened along its whole length. The shape of the acetabula in the Prionidæ was noticed long before the date of Leconte's treatise, viz. by the Marquis Maximilian Spinola, in a paper published in 1842. In this tribe, where the breast is very

broad and the haunches cylindrical, the suture is long and widely gaping. When the suture is opened only a little at its commencement near the rim of the socket, the acetabula are termed by Leconte "angulated;" but it is often very difficult (for instance, in the genus *Acanthoderes*) to say when they should be considered angulated and when round.

This work, however, being almost confined to North American productions, could only be a stepping-stone to the desideratum of a sound general classification of the Longicorn family. M. Thomson, in his Essay, adopts the system of Leconte with some slight modifications, and applies it to the Cerambycides of the whole world, for doing which his very large private collection afforded great facilities. He institutes a great number of subtribes, groups, and divisions, arranged in order under the tribes of Latreille as modified by Leconte. This, therefore, is by far the most considerable work that has yet appeared on the subject, and might be expected to form the groundwork and guide which I have alluded to as being the great desideratum in this family. It is, however, disappointing in many respects, although containing much that is very valuable, and forming, upon the whole, a real advance in the science. The greatest objection that can be made to it is that, although there seems at first sight to be a just and well-digested classification, yet the diagnoses of his groups and genera, when examined into, are found not to apply, in most cases, to the majority of the insects they refer to. The characters very often are too general and random, and do not, in fact, serve to characterize at all. The more detailed characters of the numerous new genera, however, are given in a much more satisfactory manner. Part of this obscurity is owing to the innate difficulties that the study of the group presents, as will be mentioned presently. Very many of his groups are natural, and will doubtless stand their ground, but they will mostly still require to be defined. In his fifth group of Lamiaræ, viz. the Oncideritæ, he gives as diagnosis, "Frons apud ♂ sæpissime armata. Tarsorum articulus ultimus longissimus." These two characters apply equally well to many of his thirteenth group, Hypsiomitæ—to several genera of the Apomecynitæ division of his Saperditæ (*Trestonia*, *Trachysomus*, &c.)—and partly to his fifteenth group, Hippopsitæ. Some features of his classification, however, are very good. Thus, by means of the system adopted, he has been able to ascertain that the curious South-east Asian group, Tmesisternitæ, are true Lamiaræ, notwithstanding the porrect direction of the head—a superficial and erroneous guide, which has misled all previous authors. The Callidiitæ approximated to the Spondylidæ is also a good arrangement; and there are many others of the same nature. He has done great service,

also, in characterizing most of the remaining genera and species of Dejean which still, as unmeaning names, encumbered the science. Moreover, the work, as bringing together, in something like order, a vast amount of hitherto scattered material, will be of great service.

A few more general remarks on these important works will perhaps not be out of place here, although they do not all strictly apply to the Amazonian fauna. The position of the Lepturitæ as a group subordinate to the Cerambycidæ seems to me untenable. The true Lepturitæ, by the structure of their fore haunches, the shape of the head, the insertion of the antennæ, and other features, appear to me better placed as an independent tribe, according to the system of Latreille. The Distenitæ, for similar reasons, namely the shape of the head and the insertion of the antennæ, I think should also be considered an independent tribe, instead of being intercalated between Rhopalophoritæ and Cerambycitæ. The Pseudolepturitæ of Thomson, as he justly remarks, require much further examination: they are in some respects the most curious forms of the whole family, and will require probably the institution of one or more distinct tribes. It is a merit of M. Thomson's system to have improved very much the constitution of the tribe Prionidæ, which previously was a most heterogeneous assemblage; but it has escaped him as well as other authors that the genera *Cheloderus* and *Oxypteltis*, singular Chilian forms, have a muzzle differently constructed from that of all other Longicornes. They also differ from all in the shortness of the third antennal joint. In the shape of the muzzle they resemble *Sagra* and allied genera in the family Phytophaga. They are especially ill-placed among the Prionidæ. Two Australian genera, viz. *Brachytria* and *Pytheus*, are closely allied to them; and the four, I believe, must be made to constitute another independent tribe.

In the following review of the Amazonian Coleoptera belonging to this family, I have thought it better, on the whole, to adopt the system of M. Thomson, introducing some modifications, and endeavouring to find more suitable characters for the genera, commencing with the tribe Lamiaires. It must not be urged too severely that the groups are not precisely characterized. It is a matter of great difficulty, perhaps impossibility, to find constant characters for the subordinate divisions. It is one of those groups of insects in which Nature, in striving after strong individuality in the species, seems to have changed or adapted those parts of structure on which we rely for characters of genera and groups of genera. The family, too, is found throughout all parts of the world where woody vegetation exists, and has endured probably, under the same laws of modification,

throughout long geological epochs. The diversity of specific forms seems endless, running into infinite varieties of grotesque, ornamented, and extraordinary shapes; and nearly every species has structural peculiarities for its specific characters; so that in no family can genera be made so easily and so numerous as here. Analysis is too easy, and has already been pushed, perhaps, to too great an extent.

The Lamiaires, as far as they are represented in the Amazonian fauna, seem to present six different types of form: but in none are the characters quite constant; they can only be considered as very general, but seldom apply to the whole of the species or genera. I have taken into consideration most of the parts of structure employed by Messrs. Leconte and Thomson, and have brought into prominence others which were neglected or only considered subordinate by them, viz. the shape and relative length of the basal joint of the antennæ, the tubercle and groove of the middle tibiæ, and the claw-joint and claws of the tarsi. The parts of the mouth, which offer sure characters in most other families of Coleoptera, are here of scarcely any systematic value. The palpi only occasionally furnish generic characters. The ligula, otherwise a very important organ, varies greatly in species very closely allied in all other characters. Under each subtribe I have quoted such of M. Thomson's groups and divisions subordinate to it as are represented in the Amazon region.

Subtribe 1. ACANTHODERITÆ. Basal joint of the antennæ shorter than the third, forming an elongate-pyriform club, very slender at the base. Middle tibia with the tubercle and groove on its outer edge conspicuous. Anterior acetabula generally angulated externally, the suture more or less gaping, but sometimes (*Steirastoma*) entirely closed. Tarsi simple.

Acanthoderitæ, Acrocinitæ, Oreoderitæ, Dryoctenitæ, Poly-rhaphitæ, and Anisoceritæ, *Thoms.*

Subtribe 2. ACANTHOCINITÆ. Basal joint of the antennæ much elongated, as long as or longer than the third. Middle tibia almost always with the tubercle and groove conspicuous. Anterior acetabula circular, the suture being closed or nearly so. Head narrow. Tarsi simple.

Acanthocinitæ, Trypanidiitæ, Colobotheitæ, *Thoms.*

Subtribe 3. LAMIITÆ. Basal joint of the antennæ moderate in size, forming an oblong club thickened from base to tip.

Middle tibia with the tubercle and groove always largely developed. Tarsi simple.

Monohammitæ, *Thoms.*

Subtribe 4. ONCIDERITÆ. Basal joint of the antennæ thickened from base to tip; moderate in size (except in Hippopsitæ). Middle tibia with the tubercle and groove conspicuous. Anterior acetabula angular externally. Tarsi with the claw-joint almost always greatly elongated; claws simple. Body elongated.

Oncideritæ, Apomecynitæ, pt. (*Eudesmus*, *Trachysomus*, *Trestonia*), Hypsiomitæ, Onocephalitæ, Hippopsitæ, *Thoms.*

Subtribe 5. DESMIPHORITÆ. Basal joint of the antennæ very slender at the base, abruptly clavate. Middle tibia with the tubercle and groove frequently wanting. Anterior acetabula angulated externally. Tarsi simple. Antennæ filiform, rather short, pilose; muzzle generally very short, and occiput very large, prominent.

Compsosomitæ, Desmiphoritæ, Apomecynitæ, pt. (*Hebestola*), *Thoms.*

Subtribe 6. SAPERDITÆ. Basal joint of the antennæ slender, generally thickened gradually from the base. Middle tibiæ in most of the genera wanting entirely the tubercle and groove. Anterior acetabula widely gaping externally. Tarsi always short; claws very frequently toothed or bifid. Body elongated; thorax very generally cylindric, simple.

Saperditæ, Amphionychitæ, Tapeinitæ, *Thoms.*

It is possible that this classification might be improved by withdrawing the Hippopsitæ from the Oncideritæ, and the Tapeinitæ from the Saperditæ, and instituting with them two additional tribes. I think it would be difficult, however, to form an arrangement which would meet all requirements. Each of the subtribes (except the third) will contain several natural groups, the definition of which I think it better to leave until the whole of the Lamiarie have been passed under review. The geographical distribution of the six subtribes is interesting, in so far that the first (Acanthoderitæ) is almost peculiar to the New World, a few species of one genus only having yet been recorded from the eastern hemisphere. On the other hand, the third (Lamiitæ), which exist in great number and variety of genera and species in the Old World, is represented in South America, at least in the Amazon region, by one genus only, viz. *Teniotes*.

Fam. LONGICORNES, Latr.

Tribe LAMIAIRES, Latr.

Subtribe ACANTHODERITÆ, Thoms. (pt.).

Group *Acanthoderinæ*.

Genus ACROCINUS, Illiger.

(Thoms. Class. des Cérambyc. p. 28.)

This genus, as revised by Thomson, is distinguished from *Oreodera* and all the allied genera by the simple femora. To this may be added that in *Oreodera* the basal joint of the antennæ is almost always relatively shorter and more abruptly clubbed than in *Acrocinus*; and the ♂ fore tarsi are naked in the latter, whilst they are always fringed with hairs in the former genus. The anterior acetabular sutures are widely gaping. The face in all the species is short, being nearly twice as broad as long (measuring the length from the top of the antenniferous tubercles); the muzzle is widened from the eyes downwards, and the lower angles are prominent. The eyes above nearly meet on the vertex, being separated only by the central line; below they reach the central line of the forehead only in one species (*A. longimanus*), in the others being widely separated. The fore and middle tibial grooves, with their accompanying tubercles, are removed to very near the apex of the tibiæ in *A. longimanus*; in *A. trochlearis* and *A. accentifer* they are largely developed, especially in the ♂. The fore legs are covered with granulations and elongated in the ♂ of the two species just named, and the tibiæ have a row of tooth-shaped projections along their under-surface. In *A. longimanus* the same legs are tuberculated in both sexes, the denticulations of the tibiæ are very large (extremely so and recurved in the ♀), whilst the fore legs of the ♂ reach an excessive length, the femora having also a strong tooth-shaped projection on the upper surface near the base, which does not exist in the ♂ of the other species. The thoracic lateral spines are long, acute, and retrocurved in *A. longimanus*; in the other species they exist only as points at the apices of the lateral tubercles. There are several other points of difference between *O. longimanus* and its congeners; but I think they are not of a nature to warrant the institution of a separate genus; the species must be viewed rather as a highly developed and exaggerated form of the generic type.

An erroneous statement has been made and repeated by authors with regard to the thoracic tubercles of *A. longimanus*, to the effect that they are moveable. Such a structure would be curious in the highest degree, but it does not seem to have excited attention sufficient to lead to further examination. It

is, however, an error, the credit of pointing out which is due to M. Thomson in his recent work on the Cérambycides. A deep depression around the base of the tubercle seems to have given rise to the mistake; but in fact the depression, which is found also in great numbers of Lamiæ, is not continuous, as a slight examination will show.

1. *A. longimanus*, Linn. and authors.

The Amazonian examples of this insect are smaller than those found in other parts of South America. It is not a very common insect, and is not found, as its great size would lead one to suppose, on the larger trees of the forest; I have found it almost always on slender boughs, or on tree trunks of moderate dimensions. I have sometimes cut the insect out of the rather hard wood of such trees, near the centre of which it passes the larva and pupa states. The stridulation of the species is very loud, and can be heard at many yards' distance in the forest. It appears not to be confined to one kind of tree; I have found it on the Inga, a genus of Leguminosæ, and on the Jabutí-puhé, a wild fruit-tree of the order Anonaceæ, as well as other trees. On the Inga it is sometimes seen in company with *Oreodera glauca*,—the *Oreodera* being coloured in close imitation of the bark, and clinging very closely and flatly to it, thus eluding observation, whilst *A. longimanus* in its bright colours forms a very conspicuous object. It is very slow in motion, but has the habit of bending its long legs rigidly in self-defence on being disturbed. Thus, of two allied species, one has the means of defence and maintenance of existence in one way, and one in another.

2. *A. trochlearis*, Linn.

Cerambyx trochlearis, Linn. Syst. Nat. ii. 622.

Prionus trochlearis, Oliv. Col. iv. 7. 13. 49.

This elegant species seems to be peculiar to Guiana and the Amazon region. Its habits are similar to those of *A. longimanus*, in so far as it is found on the moderate-sized branches of trees blown down in the forest.

The allied *A. accentifer* I did not meet with; it is found in S.E. Brazil and in Venezuela, but not in the intermediate country of Amazonia.

GENUS OREODERA.

Serville, Ann. Soc. Ent. Fr. iv. 19.

The body in this, as in the preceding genus, is elongated and flattened; the species, however, are of much smaller size. The prothorax has on its disk three prominent tubercles, arranged in

a triangle; but the posterior one is sometimes wanting, and in some of the smaller species the whole are obsolete. The elytra are narrowed from the shoulders to the apex. The muzzle is very short, being prolonged very little beyond the lower margin of the eyes; but it is very broad, and the lower angles are prominent. The antennæ are much longer than the body in both sexes, fringed with hairs beneath; the third joint much the longest, the first being about two-thirds its length, and dilated (chiefly on its inner side), from near the base, into an elongate club. All the femora are strongly clavate; the fore tibiæ of the ♂, in those species which approach nearest the genus *Acrocinus*, are bent near the tip, the tubercle being very prominent, and the first joint of the tarsi much elongated. All the tarsi are remarkably narrow and elongated, especially the claw-joint, more so in some species than in others, a character which distinguishes *Oreodera* from *Acanthoderes* and the allied genera. The ♂ fore tarsi are elongated and fringed with hairs. The sterna are very broad, the anterior acetabula circular, but the sutures are slightly gaping along their whole length. The ligula (in *O. glauca*) is membranous, narrow, deeply and narrowly cleft, and its outer margins are regularly rounded. The lobes of the maxillæ are small and narrow; the mentum extremely short and broad.

The species of this genus are numerous in South America. Their habits are similar to those of *Acrocinus*, with the exception that they are generally found adhering very closely to the twigs or bark of the dead trees on which they are found; and their colours being assimilated to those of the wood or bark, they are with difficulty detected. The smaller species are exclusively confined to the slender branches, the length and slenderness of their tarsal joints and claws being specially adapted for clinging to them. The females deposit their eggs on the bark; and the larvæ, when hatched, penetrate into the wood.

§ Disk of thorax with three or two prominent tubercles: tips of the elytra truncated.

1. *Oreodera undulata*, n. sp.

O. elongata, depressa, tomento tenuissimo holosericeo griseo-olivaceo vestita: elytrorum apicibus oblique sinuato-truncatis, dimidio basali granulato-punctato, apicali lineis undulatis griseis et fuscis ornato. Long. 7 lin. ♂.

Head sooty-brown, opaque: eyes nearly touching the central furrow on the vertex. Antennæ sooty-brown, the base of each joint from the third light grey. Thorax with large lateral tubercles and three discoidal ones—two transverse before, and

one longitudinal behind. Elytra tapering slightly from base to apex, the tips rather obliquely and briefly truncated, the external angles of the truncature slightly produced; the basal half studded with acute granulations accompanied by punctures, and in the centre of each, near the base, is a large, obtuse, transverse elevation, dark brown in colour: they are clothed with fine silky changeable olive-grey pile, and are variegated from the middle to the apex with fine grey and fuscous strongly undulating lines, with a grey patch on each side near the middle spotted with black. Under-surface of the body clothed with golden-grey pile. Legs greyish olive, with paler rings.

One individual, taken at Ega. This and the following species resemble much in colour and design *Acrocinus trochlearis* and *accentifer*.

2. *Oreodera fluctuosa*, n. sp.

O. elongata, depressa, tomento tenuissimo holosericeo cinereo vestita: elytris apicibus oblique truncatis et spinosis, plaga laterali pone basin, strigisque undulatis numerosis fuscis. Long. 10 lin. ♀.

Head and thorax grey: eyes nearly touching the central furrow on the vertex. Antennæ grey, apex of each joint from the third dusky. Thorax with the two anterior discoidal tubercles very prominent, the posterior one nearly obsolete. Elytra slightly tapering, the tips rather obliquely truncated, the external angles produced, dentiform; in the middle, near the base, each has a large prominent dark-brown tubercle; the basal half is somewhat sparingly granulate-punctate: ashy grey in colour; across, near the base, is a broad yellowish-grey belt, and on the margins behind the shoulders a long oblique dark-brown patch; there are also two transverse, narrow, strongly undulated belts of the same dark-brown colour,—one behind the middle, the other near the apex. Legs grey, femora varied with dusky; two rings on the tibiæ and claw-joint of the tarsi black. Under-surface of the body densely clothed with a golden-grey pile.

One example, taken at Para. I believe it is also found at Cayenne.

3. *O. glauca*, Linn.

Cerambyx glaucus, Linn. Syst. Nat. ii. 626. 28.

Lamia glauca, Fab. Ent. Syst. ii. 274. 27.

— *Spengleri*, Fab. Ent. Syst. ii. 291. 93.

This is a very common insect throughout the Amazon region as well as at Cayenne. It is found on the trunks of felled trees of one or more species of *Inga*, the bark of which it resembles in colour. The lateral tubercles of the thorax have indications of the same impressed line around them which is so strongly marked in the *Acrocini*. In the ♂ the fore legs are elongated; the tibiæ bent, rather hooked at the apex on the inner side.

The first joint of the tarsi is also much elongated in the same sex. The elytra are square at the tips, being truncated largely and transversely.

4. *O. bituberculata*, n. sp.

O. angustata, depressa, tomento tenuissimo holosericeo cinereo-brunneo vestita: elytris maculis tribus lateralibus violaceo-brunneis, quarum secunda striga undulata transversa emittente, tertiaque parva notatis. Long. 7-8 lin. ♂ ♀.

Head dusky: eyes nearly touching the central furrow on the vertex. Antennæ piceous, thinly clothed with grey pile; apices of the joints dusky. Thorax even, with two prominent discal tubercles, shining black, the third, posterior, totally wanting; punctured on the disk as well as on the fore and hind margins; lateral tubercles large, obtuse. Elytra very long, tapering from base to apex, the tips obliquely truncated, the external angles of the truncature much produced and acute; punctured throughout; two short rows of tubercles along the humeral elevations, two others on the disk near the base, and one of smaller tubercles along the suture; in some specimens the sutural row and one of the discal ones are nearly obsolete, in all they consist of a small number of tubercles: the sinuations between the purple-brown lateral spots are edged with white scales; the apical spot is very small, the other two large and semi-oval. The under-surface of the body and legs ashy; the femora varied with dusky; two rings round the tibiæ black.

I took this species at Ega and on the banks of the Tapajos. It is also found at Cayenne. I have received specimens from Paris labelled *obscurata* and *opaca*; but I cannot find any species published under those names.

5. *O. rufofasciata*, n. sp.

O. curta, depressa, tomento holosericeo argenteo-griseo vestita: elytris subtriangularibus, fascia basali rosacea postice late nigro marginata, prope apicem lineis vermicularibus argenteis et fuscis ornatis. Long. 6 lin. ♂.

Head dusky: eyes approximating on the vertex. Antennæ wholly clothed with silvery-grey pile. Thorax short and broad, dusky grey: lateral tubercles conical; anterior discal ones large, slightly elevated, transverse, clothed with pile; posterior one slightly elevated. Elytra wide at the shoulders, tapering to the tips, which are obliquely truncated, the external angles of the truncature slightly produced and directed outwards; closely granulate-punctate at the base; silvery-grey, the base with a rose-red fascia, behind which is a dusky-brown belt shading off posteriorly. Under-surface of body and legs clothed with grey pile.

At Ega, on felled Pamá (a wild fruit) trees in the forest.

6. *O. lacteo-strigata*, n. sp.

O. curta, tomento holosericeo rufo-brunneo vestita: elytris apicem versus attenuatis, pone medium fascia pallidior strigis lacteis undulatis marginata, prope apicem linea transversa undulata lactea ornatis. Long. 6 lin. ♂.

Head brown: eyes rather distant from the central line on the vertex. Antennæ pitchy-brown, base of joints paler greyish. Thorax punctured on the disk as well as along the fore and hind margins: the anterior pair of tubercles prominent, conical, dusky; the posterior one slightly elevated; the lateral ones conical. Elytra rather thickly punctured from the base to three-fourths the length, punctures large, the basal ones accompanied by granulations, each near the base furnished with a longitudinal ridge-shaped tubercle, slightly hooked behind; the basal half is deep red-brown, deepening on the sides to violet-black; the space between the pale-brown median belt and the subapical transverse undulated line is lighter brown, streaked longitudinally with dark brown; the subapical milky belt emits short branches, and is edged posteriorly with dark brown; extreme apex light brown: the apex is obliquely truncated; the external angles of the truncature acute, but not produced. Legs and under-surface of the body clothed with silky-brown grey pile.

This species was rare on the Upper Amazons. In facies it resembles species of the genus *Alcidion* (group *Acanthocinitæ*); it is readily distinguished, however, by the short clavate basal joint of the antennæ.

[To be continued.]

V.—*Remarks on some novel Phases of Organic Life, and on the Boring Powers of minute Annelids, at great Depths in the Sea.*
By G. C. WALLICH, M.D., F.L.S. & F.G.S.

IN the notice of the material obtained by the soundings taken on board H.M.S. 'Cyclops' in 1857, appended to the official report of Captain Dayman*, Professor Huxley mentions having met with a number of small rounded bodies, which he describes as consisting of several concentric layers surrounding a minute clear centre, and looking, at first sight, somewhat like single cells of the plant "*Protococcus*." To these bodies Professor Huxley provisionally applied the designation of *Coccoliths*.

In the deepest soundings taken during the recent expedition

* "Deep-Sea Soundings in the North Atlantic Ocean, between Ireland and Newfoundland, made in H.M.S. *Cyclops*, Lieutenant-Commander Joseph Dayman, in June and July 1857, published by order of the Admiralty."